

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of:	Rune Freyer
Serial No.:	10/538,330
Filed:	May 18, 2006
Entitled:	CABLE DUCT DEVICE IN A SWELLING PACKER
Group Art Unit:	3672
Examiner:	D. Andrews

**REPLY BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Appellant hereby timely submits this Reply Brief under the provisions of 37 CFR §41.41 and respectfully requests consideration thereof before the Board of Patent Appeals and Interferences. Appellant's Appeal Brief was filed 15 June 2010, and an Examiner's Answer issued 26 August 2010.

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**REAL PARTY IN INTEREST**

The real party in interest is the assignee of the present application, Halliburton Energy Services, Inc. of Houston, Texas.

**RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences known to appellant, the appellant's legal representatives or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

## **STATUS OF CLAIMS**

Claims 1-5 were originally filed in the present application. Claims 6-14 were added by amendment.

Claims 5 and 9 are canceled.

Claims 1-4, 6-8 and 10-14 are currently pending and being considered in the application.

No claims are allowed.

No claims are withdrawn.

No claims are objected to.

Claims 1-4, 6-8 and 10-14 are rejected.

Claims 1-4, 6-8 and 10-14 are being appealed.

**STATUS OF AMENDMENTS**

No amendment has been filed since the 21 January 2010 Office Action.

## **SUMMARY OF CLAIMED SUBJECT MATTER**

The following summary of claimed subject matter refers to an example of a cable duct device for use in a subterranean well, as depicted in FIGS. 1-5 and described in the specification at page 1, line 2 to page 7, line 6. In particular, this portion of the specification describes a packer 1 made of a swellable material. An opening 6 extends longitudinally through the packer 1 for receiving a cable 12 therein. A slit 10 permits the cable 12 to be conveniently installed in the opening.

In one important aspect recited in independent claim 1, a cable duct device comprises a swellable packer 1 adapted for sealing an annulus 3, the packer 1 including a seal material which swells and thereby increases in volume in response to contact with a swell-activating material (FIG. 2, and specification page 4, lines 10-14). At least one through-going opening 6 is positioned between an inner surface and an outer surface of the packer 1, and is adapted to constitute a duct for a cable or pipe 12 (FIG. 1 and page 3, lines 18-27). A slit 10 extends between the through-going opening 6 and the outer surface of the packer 1 prior to actuation of the packer 1 (FIG. 1 and page 3, line 28 to page 4, line 2).

In another important aspect recited in independent claim 6, a cable duct device comprises a packer 1 adapted for sealing an annulus 3, the packer 1 including a material which swells and thereby increases in volume to seal off the annulus 3 (FIG. 2, and specification page 4, lines 10-14). At least one through-going opening 6 is positioned between an inner surface and an outer surface of the packer 1, and is adapted to constitute a duct for a cable or pipe 12 (FIG. 1 and page 3, lines 18-27). A slit 10 extends between the through-going opening 6 and the outer surface of the packer 1 prior to actuation of the packer 1 (FIG. 1 and page 3, line 28 to page 4, line 2).

In yet another important aspect recited in independent claim 11, a method of extending a cable 12 longitudinally through a packer 1 comprises the steps of: providing a swellable packer 1 including a seal material having an opening 6 extending longitudinally through the seal material and positioned between an inner surface and an

outer surface of the packer 1 (FIG. 1 and page 3, lines 18-27), and a longitudinal slit 10 extending between the opening 6 and the outer surface of the packer 1 prior to actuation of the packer 1 (FIG. 1 and page 3, line 28 to page 4, line 2); inserting the cable 12 into the opening 6 through the slit 10 (FIG. 1 and page 3, line 28 to page 4, line 2); and then swelling the seal material by contacting the seal material with a swell-activating material, thereby causing the seal material to seal about the cable 12 in the opening 6 (FIG. 2 and page 4, lines 10-14).



**GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

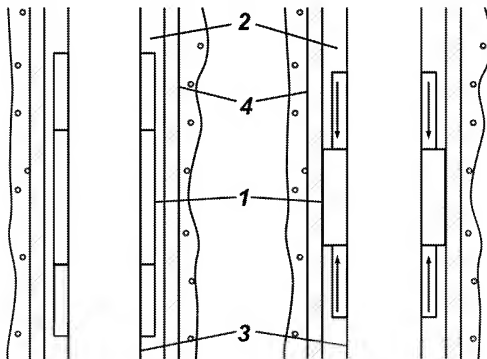
Claims 1-4, 6-8, 10-12 and 14 are rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 6,173,788 (Lembcke) in view of U.S. Patent No. 4,137,970 (Lafin)

Claim 13 is rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 6,173,788 (Lembcke) in view of International Publication No. WO 02/20941 (Freyer)

## ARGUMENT

The present invention advances the art of installing packers and cables in subterranean wells (such as oil and gas wells, geothermal wells, etc.). Please note that the specification does much more than merely describe that a cable can be extended through a packer in a well. Instead, the specification describes a unique way of conveniently installing a cable in a packer made of a swellable material. Some of the benefits derived from the invention include the elimination of connectors in the cable above and below the packer, and the effective sealing of the packer about the cable without longitudinally compressing the packer.

In the subterranean well lexicon, the term “packer” is used to indicate an annular seal. Typically, a packer is used to seal off an annulus formed radially between an inner tubing and an outer casing or wellbore. Schematically depicted below is a packer 1 which seals off an annulus 2 formed radially between a tubing 3 and a casing 4:



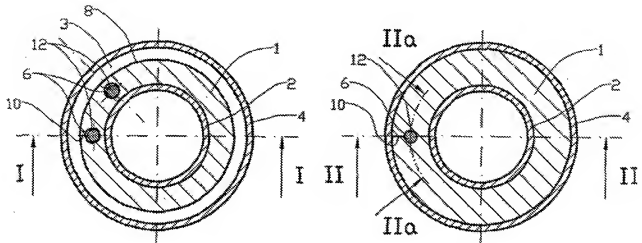
Note that a conventional packer is “set” (extended radially until it seals against an adjacent surface) by longitudinally compressing the packer, as indicated by the arrows in the right-hand drawing above. Various pressure-operated and mechanical devices exist for longitudinally compressing packers.

Sometimes, the term “packer” is used by those skilled in the art to refer to the seal element (item 1 in the drawings above). Other times the term “packer” is used by those skilled in the art to refer to a complete assembly comprising the seal element, any devices used to compress the seal element, an inner tubular mandrel on which these components are assembled, etc. Thus, the context must be consulted in order to determine whether the term “packer” is used to refer only to a seal element, or to a complete assembly used to seal off an annulus.

Significant problems arise when a cable is to be extended longitudinally through a packer. In the past, cables have been routed through the packer, through an inner mandrel thereof, through the setting mechanisms above and below the packer, etc. Unfortunately, these methods involved the use of connectors for the cable at each end of the packer, and required assembly of the cable in the packer prior to arrival at a wellsite.

Connectors are not favored, because they are prone to malfunction in the harsh, high temperature and high pressure environment of a wellbore. It is much more desirable to be able to install a continuous cable in a well, with minimal use of connectors.

To solve these problems, the present inventor conceived of constructing a packer with swellable seal material which seals about the cable, and providing a slit for convenient installation of the cable in the seal material at a wellsite. FIGS. 1 & 2 of the drawings are reproduced below:

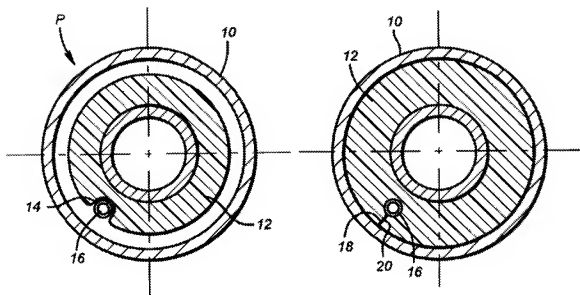


Note that the cable 12 is completely enclosed in the opening 6 prior to the packer 1 being set. The cable 12 can be installed in the opening 6 by inserting it through the slit 10 extending between the opening 6 and an outer surface of the packer 1. When the packer 1 swells, it seals about the cable 12 while also sealing against the outer casing 4. Thus, no longitudinal compression of the packer 1 is required, and the cable 12 is protected in the opening 6 both before and after the packer material swells.

In contrast, the Lembecke reference describes a packer which is set by longitudinally compressing a seal element (see col. 2, lines 36-40). Thus, the Lembecke packer is of the type first illustrated above, in which opposite ends of a seal element are pushed toward each other, in order to radially outwardly extend the seal element.

Lembecke does not specifically illustrate or describe the mechanism used to longitudinally compress his seal element. However, Lembecke does describe the setting of his packer as follows: "The packer P is preferably a noninflatable type which is actuated by relative movement of packer components in a known manner, which squeeze the element 12 from above and below to extend it into contact with the casing 10."

FIGS. 1 & 2 of Lembecke are reproduced below:



Note that a control line or “I-wire” 16 is placed in a groove 14 formed longitudinally along a seal element 12. When the seal element 12 is longitudinally compressed, it deforms about the control line or I-wire 16, thereby sealing about the control line or I-wire as it seals against an outer casing 10. Only after longitudinally compressing the seal element 12 is the control line or I-wire 16 protected within the seal element.

In the left-hand figure above, the control line or I-wire 16 is merely positioned in the groove 14. The control line or I-wire 16 is not installed in the groove 14 by passing it through a slit which extends between the groove and an outer surface of the seal element 12. Thus, the control line or I-wire 16 is only protected by the seal element 12 after the seal element has been longitudinally compressed, and up until that time (e.g., while the packer is being installed in a well, etc.), the control line or I-wire is exposed.

It is important to understand that Lembcke relies on the longitudinal compression of the sealing element to effect a seal around the I-wire or control line 16. A person of ordinary skill in the art, upon reading the Lembcke reference, would clearly be influenced to longitudinally compress a seal element in order to seal about a line, wire or cable extending longitudinally through the seal element.

In the Examiner’s Answer (see page 6, first full paragraph) it is argued that Lembcke only *preferably* provides a longitudinally compressed element, and does not

require such an element to carry out the invention. However, what Lembecke actually discloses is that the packer is *preferably a noninflatable type* (as opposed to an inflatable type) of packer. Lembecke clearly discloses that the packer is actuated by relative movement of packer components in a known manner, which squeeze the element from above and below to extend it into contact with the casing (col. 2, ll. 36-40).

In stark contrast, the Laffin reference describes a chemically activated sealing member which expands upon contact with a well fluid. In a specific example, Laffin describes a sealing member that expands upon contact with water.

The Freyer reference also describes a seal material which swells on contact with water, and a seal material which swells by absorption of hydrocarbon fluids. These seal materials are used in construction of a well packer.

Neither of the Laffin and Freyer references describes how a control line, cable or wire could be extended longitudinally through a swellable seal material, and Lembecke only describes sealing about a control line or wire by longitudinally compressing a seal element.

*Claims 1-4, 6-8, 10-12 and 14 are rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 6,173,788 (Lembcke) in view of U.S. Patent No. 4,137,970 (Laflin)*

Claims 1, 3, 4, 6-8 and 10

Independent claims 1 and 6 require:

- 1) a swellable packer;
- 2) a through-going opening positioned between inner and outer surfaces of the packer; and
- 3) a slit extending between the opening and the outer surface of the packer prior to actuation of the packer.

A person skilled in the art would not have found it obvious at the time the invention was made to have constructed the claimed invention based on the teachings of the Lembke and Laflin references.

The rejections do not satisfy the requirements set forth in the seminal U.S. Supreme Court case of *Graham v. John Deere* for evaluating whether an invention would have been obvious to a person of ordinary skill in the art at the time the invention was made. These requirements include determining the level of skill of the person having ordinary skill in the art, the scope and content of the prior art, and the differences between the claimed invention and the prior art. Additional considerations may include factors such as failure of others to solve the relevant problem, long felt but unsatisfied need, skepticism of others, teaching away in the prior art, unexpected results, copying, the pace of innovation in the art, commercial success, industry accolades, etc.

In the *Graham v. John Deere* opinion, the Supreme Court also explicitly warned against “slipping into use of hindsight” in obviousness determinations. *Graham v. John Deere Co.*, 383 U.S. 1, 36 (1966). Additionally, in the more recent case of *KSR v. Teleflex*, the Supreme Court has reiterated that an invention’s merit is not to be

evaluated from a perspective of a person having the benefit of already knowing the solution conceived by the inventor, but rather as it would have been perceived by a person having only ordinary skill in the pertinent art. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1742-43 (2007).

In the present case, the person having ordinary skill in the art would likely have a bachelor's degree in engineering or a related applied science field, and would likely have several years' experience in designing packers for use in subterranean wells. Such a person would be aware of conventional compression-set packers and swellable packers.

The scope and content of the prior art have been discussed above. However, it should be noted here that neither of the Lembcke and Laffin references teaches or suggests positioning a cable duct in a swellable packer. Only the present applicant has discovered the problems inherent in positioning a cable duct in a mechanically-set packer (such as that described by Lembcke), and has applied swellable material technology to overcome these problems.

Other than the provision of a groove for accommodating an I-wire or control line, Lembcke describes a conventional mechanically-set packer, in which the sealing element is expanded radially outward by longitudinally compressing the element. Furthermore, Lembcke relies on the longitudinal compression of the sealing element to effect a seal around the I-wire or control line, and there is absolutely no teaching or suggestion whatsoever in the Laffin reference that such sealing of a groove around an I-wire or control line could be accomplished using a swellable seal element.

The Board of Patent Appeals and Interferences recently addressed this issue in *Ex Parte Whalen II* (Appeal 2007-4423, July 23, 2008) as follows:

The U.S. Supreme Court recently held that rigid and mandatory application of the "teaching-suggestion-motivation," or TSM, test is incompatible with its precedents. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). The Court did not, however, discard the TSM test completely; it noted that its precedents show that an invention "composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *Id.*

The Court held that the TSM test must be applied flexibly, and take into account a number of factors "in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed." *Id.*



at 1740-41. Despite this flexibility, however, the Court stated that “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements in the way the claimed new invention does.” *Id.* “To facilitate review, this analysis should be made explicit.” *Id.*

[W]hen the prior art teaches away from the claimed solution as presented here . . . obviousness cannot be proven merely by showing that a known composition could have been modified by routine experimentation or solely on the expectation of success; it must be shown that those of ordinary skill in the art would have had some apparent reason to modify the known composition in a way that would result in the claimed composition.

In the present case, no convincing reasoning has been presented as to why a person skilled in the art would have been motivated to make the invention recited in the claims. In the Office Action it is stated that, “the substitution of a known element for another to obtain predictable results is obvious to one of ordinary skill.” However, in the present case, there is much more than the substitution of one known element for another. Here we have the fact that the applicant has recognized a problem which no-one else recognized, produced a solution which no-one else has produced, and accomplished what no-one else has managed to accomplish.

Lembcke did not teach, suggest or motivate anyone to provide a cable duct in a swellable packer. Laflin did not teach, suggest or motivate anyone to provide a cable duct in a swellable packer. Instead, Lembcke taught that mechanically-set packers should be used when running I-wires or control lines through packers, and Laflin merely taught how to construct a swellable packer. There is absolutely no motivation to make the combination of these references as proposed in the Office Action.

In the Examiner’s Answer (see paragraph bridging pages 6 and 7), it is argued that that one of ordinary skill in the art would substitute the swellable packer material of Laflin for the swellable packer material of Lembcke which swells upon longitudinal compression. However, Lembcke never discloses his packer material as being “swellable.” Lembcke consistently describes that, “when the sealing element is compressed, it closes around the I-wire or control line,” (Abstract and col. 1, ll. 65-66) and “the longitudinal squeezing of the element 12 expands the element until open groove 14 closes up” (col. 2, ll. 58-60). Radial expansion of the element caused by squeezing the element from above and below is not the same as swelling, as that term is

consistently used in the instant specification (i.e., “swelling” requires an increase in material volume).

The Examiner's Answer further argues that, “However, even if a specific teaching or motivation were not present, KSR forecloses the argument that a specific teaching, suggestion or motivation is required to support a finding of obviousness... .” The Appellant respectfully disagrees. Even after the *KSR* opinion, it is still necessary for the examiner to specifically articulate a real motivation for modifying a reference, or for making a proposed combination of reference teachings. The recent “Examination Guidelines Update: Developments in the Obviousness Inquiry After *KSR v. Teleflex*” (Federal Register, vol. 75, no. 169, pp. 53643-53660, 1 Sept. 2010) published by the U.S. Patent and Trademark Office emphasizes this point several times.

Clearly, the examiner's assertions of obviousness in making the claim rejections have been produced by a misunderstanding of the need for a real motivation which would have influenced a person skilled in the art to make a proposed modification or combination. In the present case, no real motivation is present for making the combination of the Lembcke and Laflin references proposed by the examiner.

Accordingly, reversal of the rejections of independent claims 1 and 6, and their dependents, is respectfully requested.

## Claim 2

This dependent claim requires that the through-going opening encloses the cable both prior to and after swelling has occurred in the swellable packer. Neither of the Lembcke and Laflin references describes the features of the invention recited in claim 2.

A requirement of a *prima facie* case of obviousness is that the reference(s) must teach all of the limitations recited in a claim. As stated in MPEP §2143.03: “To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.”

In the Examiner's Answer (see page 7, first full paragraph), it is argued that a “bore” of Lembcke would enclose the cable both prior to and after swelling has

occurred. However, as discussed above, Lembecke never discloses “swelling” of the seal element. Therefore, the “bore” of Lembecke is incapable of enclosing the cable both prior to and after swelling has occurred.

Lafin does not disclose or suggest any type of cable duct device for extending an I-wire or control line through his packer element. As previously discussed, a person having ordinary skill in the art would have no reason to replace the seal material of Lembecke with the swellable material of Lafin.

Since all of the limitations of claim 2 are not taught or suggested by the Lembecke and Lafin references, a *prima facie* case of obviousness has not been made out. Therefore, reversal of the rejection of this claim is respectfully requested.

#### Claims 11-14

Independent claim 11 requires that a cable is inserted into an opening through a slit, and then a seal material is swollen, thereby causing the seal material to seal about the cable in the opening. No person of ordinary skill in the art would have been motivated to practice the invention recited in claim 11, based on the teachings of the Lembecke and Lafin references.

A *prima facie* case of obviousness is not made out for claim 11, because neither of the Lembecke and Lafin references describes inserting a cable into an opening through a slit, neither of the references describes sealing about a cable in the opening by swelling a seal material, and neither of the references describes the swelling step being performed after the cable is inserted through the slit. Claim 11 requires swelling the seal material by contacting the seal material with a swell-activating material, thereby causing the seal material to seal about the cable in the opening.

In contrast, Lembecke specifically discloses that the act of setting the packer assures a reliability of seal around the control line or I-wire with the same integrity as the seal against the casing (col. 3, ll. 10-13). Substitution of the swellable material of Lafin for the element material of Lembecke would not change the fact that the element still closes and seals about the cable as a result of longitudinal squeezing of the element

(col. 2, ll. 58-62). Since claim 11 requires the seal material to seal about the cable as a result of swelling the seal material by contacting the seal material with a swell-activating material, the combination of references proposed by the examiner would not produce the invention as claimed.

Therefore, for at least these reasons, reversal of the rejections of claim 11 and its dependents is respectfully requested.

Furthermore, the rejections do not satisfy the requirements set forth in the seminal U.S. Supreme Court case of *Graham v. John Deere* for evaluating whether an invention would have been obvious to a person of ordinary skill in the art at the time the invention was made. These requirements include determining the level of skill of the person having ordinary skill in the art, the scope and content of the prior art, and the differences between the claimed invention and the prior art. Additional considerations may include factors such as failure of others to solve the relevant problem, long felt but unsatisfied need, skepticism of others, teaching away in the prior art, unexpected results, copying, the pace of innovation in the art, commercial success, industry accolades, etc.

In the *Graham v. John Deere* opinion, the Supreme Court also explicitly warned against “slipping into use of hindsight” in obviousness determinations. *Graham v. John Deere Co.*, 383 U.S. 1, 36 (1966). Additionally, in the more recent case of *KSR v. Teleflex*, the Supreme Court has reiterated that an invention’s merit is not to be evaluated from a perspective of a person having the benefit of already knowing the solution conceived by the inventor, but rather as it would have been perceived by a person having only ordinary skill in the pertinent art. *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1742-43 (2007).

In the present case, the person having ordinary skill in the art would likely have a bachelor’s degree in engineering or a related applied science field, and would likely have several years’ experience in designing packers for use in subterranean wells. Such a person would be aware of conventional compression-set packers and swellable packers.

The scope and content of the prior art have been discussed above. However, it should be reiterated here that neither of the Lembcke and Laflin references teaches or

suggests positioning a cable duct in a swellable packer. Only the present applicant has discovered the problems inherent in positioning a cable duct in a mechanically-set packer (such as that described by Lembcke), and has applied swellable material technology to overcome these problems.

Other than the provision of a groove for accommodating an I-wire or control line, Lembcke describes a conventional mechanically-set packer, in which the sealing element is expanded radially outward by longitudinally compressing the element. Furthermore, Lembcke relies on the longitudinal compression of the sealing element to effect a seal around the I-wire or control line, and there is absolutely no teaching or suggestion whatsoever in the Laflin reference that such sealing of a groove around an I-wire or control line could be accomplished using a swellable seal element.

No convincing reasoning has been presented as to why a person skilled in the art would have been motivated to make the invention recited in the claims. In the Office Action it is stated that, “the substitution of a known element for another to obtain predictable results is obvious to one of ordinary skill.” However, in the present case, there is much more than the substitution of one known element for another. Here we have the fact that the applicant has recognized a problem which no-one else recognized, produced a solution which no-one else has produced, and accomplished what no-one else has managed to accomplish.

Lembcke did not teach, suggest or motivate anyone to provide a cable duct in a swellable packer. Laflin did not teach, suggest or motivate anyone to provide a cable duct in a swellable packer. Instead, Lembcke taught that mechanically-set packers should be used when running I-wires or control lines through packers, and Laflin merely taught how to construct a swellable packer. There is absolutely no motivation to make the combination of these references as proposed in the Office Action.

For this additional reason, reversal of the rejections of independent claim 11 and its dependents is respectfully requested.

*Claim 13 is rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 6,173,788 (Lembcke) in view of International Publication No. WO 02/20941 (Freyer)*

Claim 13 requires that the swell-activating material used to swell the seal material comprises hydrocarbons. Although Freyer does describe a seal material which swells in response to contact with hydrocarbon fluid, a person skilled in the art would not have been motivated to make the combination of the Lembcke and Freyer references as proposed in the Office Action.

The rejection does not satisfy the requirements set forth in the seminal U.S. Supreme Court case of *Graham v. John Deere* for evaluating whether an invention would have been obvious to a person of ordinary skill in the art at the time the invention was made. These requirements include determining the level of skill of the person having ordinary skill in the art, the scope and content of the prior art, and the differences between the claimed invention and the prior art. Additional considerations may include factors such as failure of others to solve the relevant problem, long felt but unsatisfied need, skepticism of others, teaching away in the prior art, unexpected results, copying, the pace of innovation in the art, commercial success, industry accolades, etc.

In the *Graham v. John Deere* opinion, the Supreme Court also explicitly warned against “slipping into use of hindsight” in obviousness determinations. *Graham v. John Deere Co.*, 383 U.S. 1, 36 (1966). Additionally, in the more recent case of *KSR v. Teleflex*, the Supreme Court has reiterated that an invention’s merit is not to be evaluated from a perspective of a person having the benefit of already knowing the solution conceived by the inventor, but rather as it would have been perceived by a person having only ordinary skill in the pertinent art. *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1742-43 (2007).

In the present case, the person having ordinary skill in the art would likely have a bachelor’s degree in engineering or a related applied science field, and would likely have

several years' experience in designing packers for use in subterranean wells. Such a person would be aware of conventional compression-set packers and swellable packers.

The scope and content of the prior art have been discussed above. However, it should be reiterated here that neither of the Lembcke and Freyer references teaches or suggests positioning a cable duct in a swellable packer. Only the present applicant has discovered the problems inherent in positioning a cable duct in a mechanically-set packer (such as that described by Lembcke), and has applied swellable material technology to overcome these problems.

Other than the provision of a groove for accommodating an I-wire or control line, Lembcke describes a conventional mechanically-set packer, in which the sealing element is expanded radially outward by longitudinally compressing the element. Furthermore, Lembcke relies on the longitudinal compression of the sealing element to effect a seal around the I-wire or control line, and there is absolutely no teaching or suggestion whatsoever in the Freyer reference that such sealing of a groove around an I-wire or control line could be accomplished using a swellable seal element.

No convincing reasoning has been presented as to why a person skilled in the art would have been motivated to make the invention recited in the claims. In the Office Action it is stated that, "the substitution of a known element for another to obtain predictable results is obvious to one of ordinary skill." However, in the present case, there is much more than the substitution of one known element for another. Here we have the fact that the applicant has recognized a problem which no-one else recognized, produced a solution which no-one else has produced, and accomplished what no-one else has managed to accomplish.

Lembcke did not teach, suggest or motivate anyone to provide a cable duct in a swellable packer. Freyer did not teach, suggest or motivate anyone to provide a cable duct in a swellable packer. Instead, Lembcke taught that mechanically-set packers should be used when running I-wires or control lines through packers, and Freyer merely taught how to construct a swellable packer. There is absolutely no motivation to make the combination of these references as proposed in the Office Action. It is only

through impermissible hindsight reasoning based on the applicant's disclosure that the examiner has proposed such a combination.

Accordingly, reversal of the rejection of claim 13 is respectfully requested.

Respectfully submitted,

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I hereby certify that this correspondence is being  
filed in the U.S. Patent and Trademark Office  
electronically via EFS-Web, on October 25, 2010.

/Sally Ann Smith/

\_\_\_\_\_  
Sally Ann Smith



**CLAIMS APPENDIX**

1. A cable duct device, comprising:

a swellable packer adapted for sealing an annulus, the packer including a seal material which swells and thereby increases in volume in response to contact with a swell-activating material;

at least one through-going opening positioned between an inner surface and an outer surface of the packer and adapted to constitute a duct for a cable or pipe; and

a slit extending between the through-going opening and the outer surface of the packer prior to actuation of the packer.

2. The device according to claim 1, wherein the through-going opening encloses the cable both prior to and after swelling has occurred in the swellable packer.

3. The device according to claim 1, wherein the through-going opening has a variable longitudinal extension.

4. The device according to claim 1, wherein the through-going opening has a variable cross-section.

5. (canceled)

6. A cable duct device, comprising:

a packer adapted for sealing an annulus, the packer including a material which swells and thereby increases in volume to seal off the annulus;

at least one through-going opening positioned between an inner surface and an outer surface of the packer and adapted to constitute a duct for a cable or pipe; and

a slit extending between the through-going opening and the outer surface of the packer prior to actuation of the packer.

7. The device of claim 6, wherein the packer seals about a cable positioned in the through-going opening when the packer is actuated.

8. The device of claim 6, wherein the packer extends lengthwise in a longitudinal direction, wherein the through-going opening extends longitudinally through the packer, and wherein a cable extends longitudinally through the through-going opening.

9. (canceled)

10. The device of claim 6, wherein a cable is inserted through the slit and positioned in the through-going opening.

11. A method of extending a cable longitudinally through a packer, the method comprising the steps of:

providing a swellable packer including a seal material having an opening extending longitudinally through the seal material and positioned between an inner surface and an outer surface of the packer, and a longitudinal slit extending between the opening and the outer surface of the packer prior to actuation of the packer;

inserting the cable into the opening through the slit; and  
then swelling the seal material by contacting the seal material with a swell-activating material, thereby causing the seal material to seal about the cable in the opening.

12. The method of claim 11, wherein the swell-activating material comprises water.

13. The method of claim 11, wherein the swell-activating material comprises hydrocarbons.

14. The device of claim 6, wherein the packer comprises a swellable packer including a seal material which swells and thereby increases in volume in response to contact with a swell-activating material.

**EVIDENCE APPENDIX**

(none)

**RELATED PROCEEDINGS APPENDIX**

(none)